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SCIENCE

WEATHER:

Winter of Discontent

The nation's top weather men slogged into New York last week for the 41st annual meeting of the American Meteorological Society and fittingly enough it began to snow again—the second big fall in two weeks.* Naturally the question was raised: Why is the East suffering so much more this year than last?

According to the Weather Bureau's chief long-range forecaster, Jerome Namias, it's all a matter of "planetary waves," the huge currents of air, like the trade winds, which circulate through the atmosphere. For reasons still obscure to meteorologists, the wave pattern this year is sharply different.

"This winter has been characterized by very large meanders in the planetary waves, with strong ridges and troughs," Namias said. "The waves are bringing Arctic and Asian air masses very rapidly down across Canada, the Great Lakes and into the Gulf where they strike the warm, moist air of the South, often from the tropics. This powerful contrast sets up a cyclone action which lifts the moist air and carries it off to the Northeast, where it releases the snow.

"This wind condition did not exist last winter. Instead of pronounced ridges and troughs, the waves were flattened and we had the familiar westerly pattern with little contrasts between warm and cold to intensify storms."

Going Down: Taking a wider look at the world's weather, J. Murray Mitchell Jr., a Weather Bureau climatologist, reported that winters have been getting colder since 1950. This reverses the warming trend in effect since 1880s, and particularly strong in the '20s and '30s. The finding raises new questions about the forces which control climate. His report also challenges some ideas that have been widely accepted recently—particularly the theory that carbon dioxide from autos and factories is producing a "greenhouse" effect in the atmosphere, leading to a steady build-up in the earth's heat.

The weather men leaned increasingly to the idea that the sun is a principal force in shaping weather. Though its total radiation (mostly visible light) appears constant, its output of X rays and particles varies widely. In ways not yet clear, the changes in these radiations are believed to set off the vast processes of terrestrial weather.

In the midst of their discussions of the mysterious ways of weather and climate, the meteorologists in New York last week were bombarded with a flat challenge to do something about controlling the perennially unpredictable weather.

The challenge came from Rear Adm. Luis de Florez, U.S.N.R. (Ret.), who loves to launch vast ideas. "It is strange indeed that the American people . . . display the same fatalism and resignation about the weather that our remote ancestors did thousands of years ago," he told the Institute of Aerospace Sciences, also meeting in New York. "We do not seem to realize that the problem of weather control, gigantic as it is, can be subjected to the same sort of attack which brought about our great discoveries in the fields of flight, nuclear power, medicine . . ." De Florez wants weather research funds tripled, a sharp increase in education of new meteorologists, and an all-out attack on the dynamics of the atmosphere to pinpoint the triggering mechanisms essential to weather control.

This would include the familiar techniques of cloud seeding with dry ice, silver iodide crystals and carbon black. But it would also be directed toward the discovery of devices to control tornadoes, hurricanes and long-term climate trends.

A stocky, blue-eyed man of 71 who still pilots his own amphibian on long hunting trips to Canada, De Florez argues that even slight improvements in rainfall might open vast territories to agriculture. "It is a practical goal, it can be done, and we have the tools to do it," he said. "The question is, do we want it in a short time, or just let it drift along and get it in 50 to 100 years?"